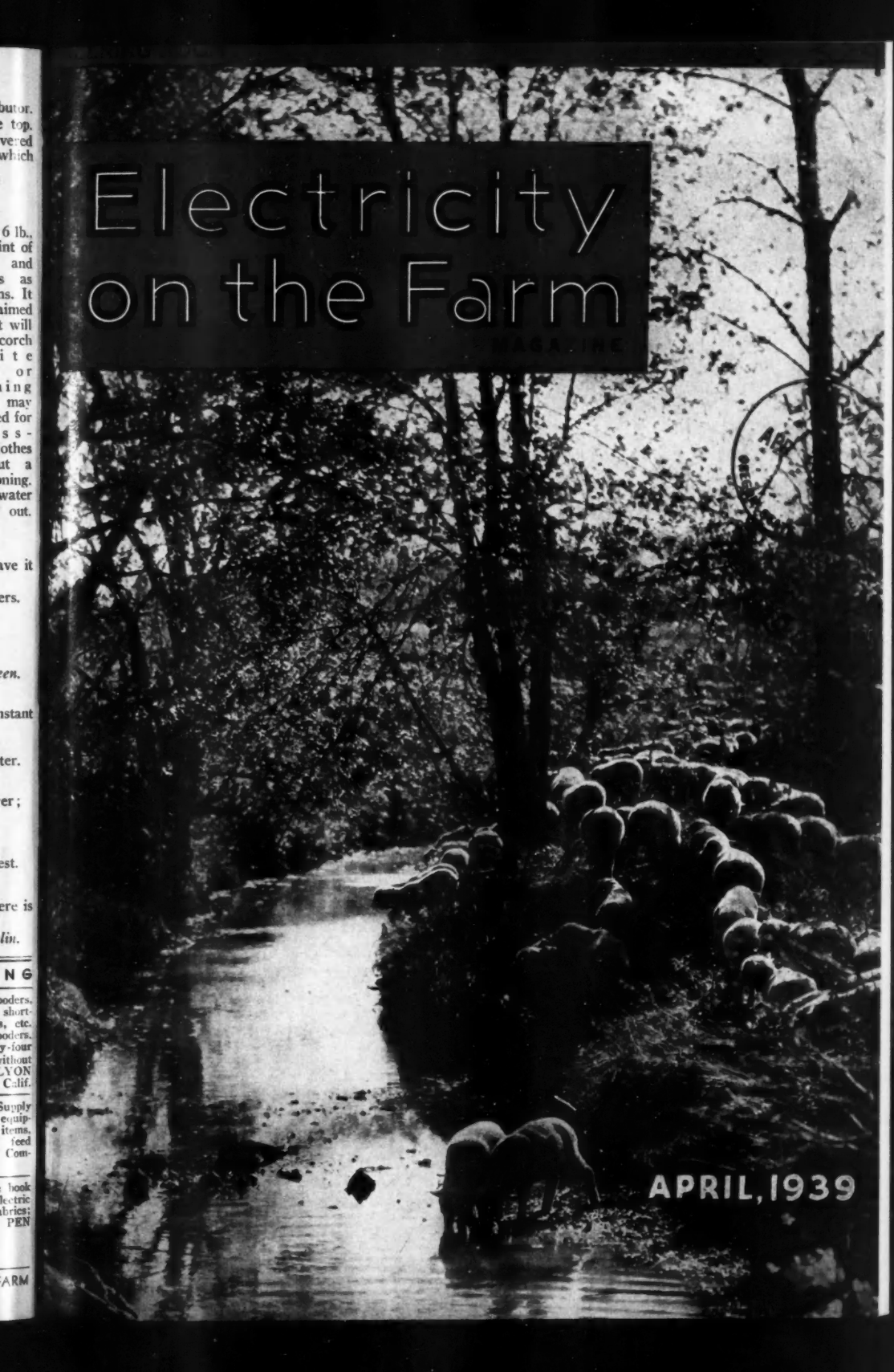

Electricity
on the Farm
MAGAZINE
APRIL, 1939

General Electric Has Built a Better Refrigerator at a Lower Price for '39!

IT'S A BEAUTY AND A BARGAIN!

SEE this big, new 1939 General Electric—a far better G-E Refrigerator at a lower price! Faster freezing, new conveniences and scores of proved features!

Look to G-E leadership for the genuine contributions that make for better refrigeration at less cost. From the famed G-E Laboratories came the first sealed cold-making mechanism, and now G-E gives you *perfected*

Selective Air Conditions

—the most practical method for convenient, economical and safe food preservation at low cost.

RESEARCH KEEPS GENERAL ELECTRIC YEARS AHEAD!

The original sealed-in-steel G-E Thrift Unit, now widely imitated, holds an enviable record for dependable service and enduring economy. It has been constantly improved through 13 years and now has forced-feed lubrication and oil cooling—features that give quieter operation, lower current cost and longer life. General Electric Co., Specialty Appliance Div., Nela Park, Cleveland,

GENERAL ELECTRIC

TRIPLE-THRIFT REFRIGERATORS

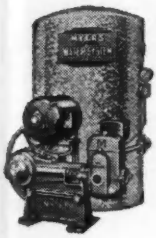
GO G-E—ALL THE WAY!

Open an account with General Electric. Own a G-E Radio, Refrigerator, Range, Washer, Water Heater, Vacuum Cleaner or Milk Cooler on G-E's easy monthly payment plan.

See G-E "House of Magic" at both World Fairs

YOU WOULDN'T FILL A WASHBOWL WITH A TEASPOON

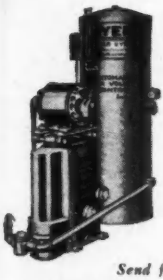
FOR *Adequate Capacity* BUY A MYERS WATER SYSTEM!



WHEN you install a water system, you expect that *any time a faucet is opened,* the water will run in a full, steady stream. Some owners, considering price quotations instead of efficiency, have mistakenly purchased water systems *with sustained capacity barely sufficient* to supply one faucet at a time. Turn on two or more faucets simultaneously in such a home—as frequently happens when one person attempts to draw water in the kitchen or laundry, while another uses the bathroom—and the water flow quickly sinks to an aggravating dribble because *reserve capacity* is lacking. Be wise and protect yourself against disappointment. Assure satisfactory performance by ordering a reliable, precision-built MYERS Water System of *adequate capacity.*

RUNNING WATER
YOUR FAMILY DESERVES IT

Thousands of suburban and country families enjoy smooth, trouble-free, economical service with a reliable MYERS Water System. They are certain of all the water they need, any time day or night—for household uses — at outside hose taps for sprinkling and fire protection—in barnyard and outbuildings—at lowest possible cost for operation and upkeep. The quality of MYERS products is world famous. A MYERS Water System means lifetime satisfaction. Deep well and shallow well models to meet all conditions; for operation by electricity, gasoline engine, windmill or hand power. See your dealer and write for interesting free booklet.



— THE F. E. MYERS & BRO. CO. —
1124 ORANGE STREET ASHLAND, OHIO

"Pump Builders Since 1870"

Water Systems (electric) ☐

Water Systems (gasoline)	☐	Sump Pumps	☐
Power Pumps	☐	Hand Sprayers	☐
Hand Pumps	☐	Power Sprayers	☐
Pump Jacks	☐	Hay Unloading Tools	☐
Centrifugal Pumps	☐	Door Hangers	☐

Send free information on items checked and name of your nearest dealer.

Name .....

Address ..... WS 9-15

NO NEED TO WAIT FOR ELECTRICITY

Homes which have not yet been reached by the electric power lines, can enjoy in full the comfort and protection of running water with a MYERS Gasoline Powered System. Should electricity become available later on, these MYERS systems can be converted to fully automatic electric operation, simply by mounting an electric motor in place of the engine.

MYERS
PUMPS · WATER SYSTEMS · SPRAYERS ·

Take Off Your Hat to The MYERS

Editor's Chat

SPRING

The crocuses are in bloom. Daffodils are pointing toward the sky. Yesterday both were covered with March snow. Today undaunted, they are welcoming the sun. It's Spring!

This noon I walked through the little park behind the Public Library. It has grass and many pigeons (more like the country than anything else in these parts—bless it!). And such wing scraping, pirouetting and cooing! I do not understand pigeon language, but I know what they were talking about. It's Spring!

Spring is a glorious time. With green pastures, frolicking lambs, young life, new growth, freshened hopes, we start anew. It is from this season that Summer springs and Autumn yields. The seeds we plant this Spring produce the harvest. Not all seeds are grain and grass. Refrigerators should be planted in spring thoughts for summer cooling. The promise of irrigation water to nurture struggling growth must be "planted" as furrows, levelled stretches or sprinkler orders, with the seed. As spring grasses flush the milk-flow, so should spring plans be grown for water systems, sterilizers and coolers to flush the summer milk price.

It's Spring—the time for growth and development!

IF WAR COMES

Few people want war. We do not even like to think about war. Yet some countries are at war. Others are taxing their citizens to the limit and going in debt to strengthen defenses, to build navies, to possess great air fleets, to train armies; even we. Nations are calling each other names; issuing dares. Some big bullies are kicking our friends, taking their marbles and fishing tackle. It makes us "mad." We feel like slapping them down. Our newspapers are full of that subtle inflammatory stuff that arouses our ire. It also arouses our potential enemies and makes them want to slap us down. And all the time *we* and *they* are building fighting forces for *defense* to be ready to stop the "slapper downers."

We do not like war. We do not want war. But as a nation we prepare for possible war.

In the last war we were asked for more food supplies. Labor was scare and costly. In the next war farmers will be called on for more foods and for raw products for industry. Farm preparation for war embraces planning for greater efficiency, stepping up production with fertilizers, poultry lighting, improved methods; and equipping the farm for greater production with less labor. The advantage of farm investments for war is that they make living better and have value and earning power in time of peace.

ADVERTISEMENTS

An editor, so they tell me, is not supposed to have anything to do with the advertising in his magazine or to know anything about it. Being only a year and a half old, I'm still learning. This I have learned: On closing day (that's when we make the final decision on what is to be printed) there is usually a good, timely article that one of you has written, or a cartoon or a half page of Questions and Answers or some of Gail Meredith's cake recipies that are crowded out for lack of space. Then I become advertising conscious. I storm at Karl Gorham. Why not leave out the ads? Why not put in more pages? Sorry truth: Some folks get more good from the ads than they do from the Editor's Chat. And Guzinto. Yes, yes, we have to do the Guzinto problem. Expense goes into the income or the manager goes into a "stew." More pages of advertising means more pages of articles.

Advertising is an essential part of a well balanced magazine. The articles tell facts about equipment and how to use it. The ads tell the features of particular makes and where to get them. Write to advertisers for prices and catalogs, for instruction sheets and educational booklets. They welcome your letters whether you intend to buy or not. Many of them have very interesting and helpful information which they send free. And if you are gracious enough to mention ELECTRICITY ON THE FARM it may even help to prevent closing-day editor's jitters.

George Kable

April, 1939 **ELECTRICITY ON THE FARM** **Vol. 12, No. 4**

Issued Monthly by

CASE-SHEPPERD-MANN PUBLISHING CORP.

Editorial-Executive Offices: 24 West 40th Street, New York

GEORGE W. KABLE, *Editor;* KARL M. MANN, *President;* FRED SHEPPERD, *Editorial Director;* I. H. CASE, *Vice-Pres. and Gen'l Mgr.;* K. H. GORHAM, *Advertising Manager;* H. S. ESSEX, *Production Manager.* CHICAGO: 6 No. Michigan Ave.—W. S. CLEVENGER, Western Manager; L. M. ROCHE, Western Representative. SAN FRANCISCO: 444 Market St., Room 305—C. H. WOOLLEY. Subscription price 75 cents per year; single copies, 10 cents; Special Bulk Rates on application. *Contents Copyrighted* 1939 *by Case-Shepperd-Mann Pub. Corp.*

AN INVESTMENT IN GEORGE

An Electric Milk Cooler Was the "Shot" Needed to Arouse a Boy's Interest in the Home Farm. And Incidentally It Made Money for Dad

By C. E. WYLIE

Prof. Wylie is head of the Dairy Department, University of Tennessee.

GEORGE was sixteen years old and in high school. He had always lived at home on the farm with the family. One thing he was sure of: "I am not going to spend all my days on the farm." Dad and his mother were quite concerned over what would become of George as he was the third of five children. He was not quite certain what he would do and the family would hear him say that he would become first this, then that, and then the other thing. The two oldest daughters were already married and it was quite a problem as to what George, the oldest of the three sons, was to do.

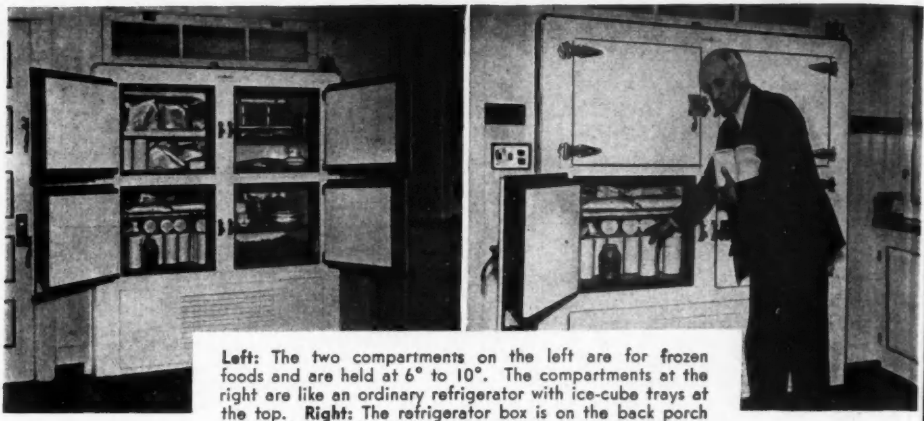
The father, Frank Watkins, owned the farm and wanted his oldest son to follow in his footsteps. He was quite willing that "George should become a better man than I am." Most fathers have this feeling. Mr. Watkins was recognized as an able man in his community and a good farmer and it hurt his pride to have George suggest that he did not like the farm. Quite frequently he talked with Mrs. Watkins at night about their son, after George had gone to bed.

In the meantime the high school work of George progressed. He had taken a course in physics, had studied about electricity, and had learned how to ring a door bell with a battery. There has been other uses for electricity There were electric lights in the home, but George took no interest in any of the home activities. He was restless. One day he came home from school and suggested to his father that they "Buy an electric milk cooler." Mr. Watkins was ready to resist this idea from the very first. To spend money on such a thing when they did not need it was extravagance and waste. He was ready either to "blow up" or to ignore what George had said. Lots of fathers have been in the same position. And then the anxious conversations which he had had with his wife over George's future came to him. Was this merely buying an electric milk cooler or was it a means of getting George's interest in the home place. To the surprise of the whole family, a wet type milk storage cooler was purchased with a compressor attached. George took a great deal of pride in helping to select it. Even though he had had no experience with such equipment, he helped the electrical expert install it in the dairy. It seemed to have lots of interesting parts and "gadgets." Of course, Mr. Watkins was interested in it as a piece of farm equipment, but George saw lots of other things in it. There were many things which he was studying at school—physics, bacteria, chemistry, and agriculture, all of which seemed related to this one piece of equipment.

It wasn't long before the local milk companies offered a higher price for the better grades of milk. Few dairymen could qualify for it. Mr. Watkins' herd was one which met the requirements and immediately the milk began to sell at a higher price. George began to see the relation of this milk cooler to the cows and the relation of the cows to the income and operation of the farm. And for the first time in his life he really became interested in the Watkins homestead. Things appeared to him in a different light. Here was an interesting place to work and interesting things to do.

As Mr. and Mrs. Watkins sat by the fireside in November and reflected on the activities of their son they had decided that George had "turned over a new leaf"—that he had a "new lease on life"—and that this electric milk cooler was really one of the first steps in starting him off. If a milk-cooler could do that, how about other things electricity could do on the farm? They were no longer thinking of investing in equipment. They were investing in George's future.

Mr. Watkins was interested in the milk cooler as a piece of farm equipment, but to George it was also an alluring laboratory full of challenging problems in electricity, mechanics, physics, chemistry and bacteriology—and all tied up to what had been the drudgery of running a dairy.



Left: The two compartments on the left are for frozen foods and are held at 6° to 10°. The compartments at the right are like an ordinary refrigerator with ice-cube trays at the top. **Right:** The refrigerator box is on the back porch with its face in the kitchen. Mr. Goodin just wishes it was larger.

COLD CANNING
WITH A HOME ELECTRIC FREEZER

By BEN W. FABER

"YES, this is Mrs. Goodin."

"Just a minute; Portland is calling you."

"Hello, Mrs. Goodin, this is Bruce. Cordise and I were just thinking we'd like to take a run out to see you and Tom. Would it be O. K.?"

"Of course, come right on out. And why not pick up the Poynters at Hillsboro and bring them along?"

"We'll do that, too."

This is a telephone conversation that took place recently. When the Bruces and the Poynters arrived at the Goodin farm they had a real surprise. Although it was winter, Mrs. Goodin served fresh strawberries and cream. Now the Oregon climate is wonderful, but even so, strawberries do not ripen in December. The T. P. Goodin family, living on a farm near Hillsboro, Oregon, doesn't depend upon a fickle weatherman for their fresh fruits. Located right in their kitchen is a large refrigerator, which not only does what every household refrigerator does, but it also has a large freezing compartment where meats, berries and vegetables are kept fresh.

In addition to strawberries this low temperature compartment contains raspberries, youngberries, boysenberries, gooseberries, wild blackberries, peaches, peas, beans, beef and chicken.

In Mrs. Goodin's own words, "It makes canning so easy. I simply put the fruits and vegetables to be canned in the cold compartment. Many of the farm products can be put in without any processing. Peas and beans should be blanched for just a few minutes. Strawberries are put in with a little sugar added. Peaches are covered with a sugar syrup. Meat is simply cut and wrapped in wax paper."

Formerly a freezer locker located in Hillsboro was used for storage. The storage box right at home has been much more satisfactory, and as Mr. Goodin points out with a Corrigan grin, "I never brought home the right things when we had the locker in Hillsboro, and Mrs. Goodin would make me go back. Now she has everything right in the kitchen. It's certainly handy. We get our products into cold storage sooner now and therefore they are fresher and taste better. Besides, we don't have to go into that cold storage room to get the stuff out."

The refrigerator is large. It has 25 cubic feet of space divided evenly between cold storage and regular household refrigeration. A ⅓ horsepower motor keeps the whole box cold, and the average use of electricity over ten months' time was 65 kw-hrs. per month. This is very reasonable when one considers that there are 12½ cubic feet of space held at 6 to 10 degrees and 12½ cubic feet held at 40 to 45 degrees.

The Goodins had a natural place for the refrigerator. The box is on the back porch with the front extending through the wall into the kitchen. The compressor unit was originally in the base of the cabinet, but has been found to operate better in the cellar.

When asked if they would do any differently if they were to install another refrigerator, Mr. Goodin thought it might be better to have a larger one, more roughly constructed, located in the cellar and used entirely for low temperature storage. They would keep their regulation household refrigerator for ordinary storage in the kitchen. Mrs. Goodin did not agree. She liked just what she had and wanted it right in the kitchen.

LIGHTS
STOP CHICKEN THIEVES

A Community Acts Successfully for Protection Against a Distressing Loss

By CAPT. B. W. AMSTEIN

EVERY farmer can help protect his premises from poultry thievery by taking a few simple preventive measures. Some farms invite thieves with absence of yard lights, poor fences, situation of valuable property at a distance from the house, and the presence of birds roosting in the open without suitable protection. Most discouraging to marauders are well lighted yards, stout fences, a good watch dog and suspended bells or other objects which make a loud noise when accidentally disturbed.

More light is perhaps the cheapest, simplest and most effective means of preventing thefts of farm poultry. Police records show that most robberies are committed between eight o'clock and midnight. Well lighted premises, therefore, are a cheap insurance against theft, for it is well known that burglary thrives in darkness and flees from light.

It is a simple matter to install several outdoor lights so that they illuminate most of the outdoor area surrounding the chicken houses. Their operation may be regulated by an automatic time clock which turns them on and off at the desired hours.

The value of light in preventing poultry thefts is illustrated by a case of a local poultryman whose twenty-one acre farm is famous throughout the west for its high quality Australorps and White Leghorns, and the products of their crossings, Austra-Whites and White Austers. One night two hundred valuable Australorp breeding hens, line bred for generations were stolen. Next day the owner began installing a protective lighting system for his farm, and he has suffered no losses since.

Capt. Amstein heads a Los Angeles County, Calif., sheriff's force of nineteen men in a 107-square mile district containing many small poultry farms. He is the originator of the movement, described in the article, to promote wider use of protective farm lighting.

In the early fall of 1938 we instituted in our part of the county a movement to promote farm protection by outdoor lighting. In addition to our own efforts, we enlisted the aid of the local power company lighting men to help sell the idea to the farmer. Articles were inserted in local newspapers pointing out the dollar and cents value of outdoor illumination. The success of the campaign was immediate. Our records showed only two poultry thefts during October. There were twenty in October of the previous year.

There are other supplementary measures which every farmer may take to protect his property. One is to ask a police officer to look over the premises and follow his suggestions on making it less vulnerable to theft.

Tattooing or toe marking birds is an answer to the problem of identifying stolen birds. In this way, legal identification can be established in case they are stolen and recovered.

A watchful attitude toward suspicious characters is another good protection. For instance, if a stranger makes some pretext to get a close look at your property, make a note of the license number of his automobile. Be sure he sees you do it. If he is not above reproach, this will discourage his return, for license numbers are positive identification and can be easily checked.

Have You Seen a 5 H.P. or Smaller Motor Grind Ear Corn Satisfactorily?

Throughout the United States there are many farmers who are interested in the grinding of ear corn and snapped corn. In the South husks are left on the corn to protect it from insect injury. In other sections, in spite of the fact that corn cobs have little feeding value, they do have some bulk and many farmers prefer grinding the whole ear rather than to do the extra work of shelling and grinding. Generally this has meant heavy grinders, and motors of 10 h.p. or larger to permit scoop-shovel feeding, or feeding at a rate which is satisfactory to the farmer who is busy and places a money value on his time.

Frankly, I have been hesitant to recommend motors of less than 10 h.p. to a business farmer for grinding ear corn. Now 10 h.p. motors call for a fairly large investment. They require heavy wiring, larger than customary transformers, and in some places a service charge which makes their use prohibitive unless one has regular use for them throughout the year. Ear corn grinding has therefore been pretty largely a tractor or custom grinding job.

In recent years there have been improvements in grinders of both the burr and hammer type. Claims have been made that some of these mills have done a very satisfactory job of grinding ear corn on farms with motors of 2 to 5 h.p. Have you seen it done? If you have—or if you have tried and found it impractical—and are willing to spend a stamp to help some other farmer to go right, we will promise to give an unbiased summary of replies in ELECTRICITY ON THE FARM. Tell me your experience, the make and size of mill and motor and give actual figures on time and quantities ground, if you have them.—THE EDITOR.

SEPTIC TANKS FOR THE FARM

How to Dispose of Farm Sewage in the Most Sanitary and Trouble-Free Manner. Pointers on Installation and Care of Septic Tanks

By JOHN R. HASWELL

"THE folks were so anxious to try the new bathtub that they ran several tubfuls of water into the septic tank before the form was taken out. This was the answer the county agent gave as to why the community septic tank form looked so battered. Being made of wood, it had swelled and wedged itself into the concrete. It is recomended that concrete be kept damp while it cures; but folks, you should wait until the forms are taken out.

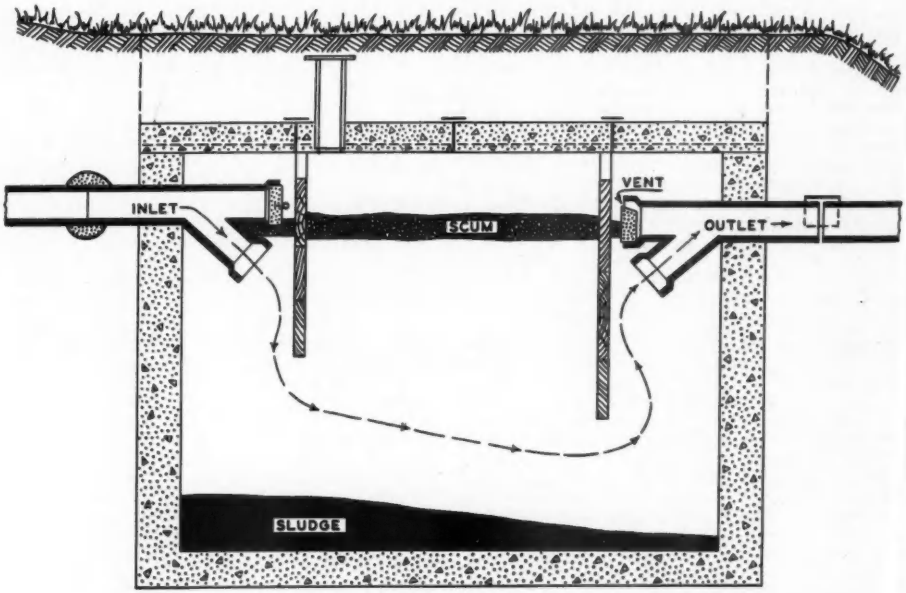
"Jack" Haswell is Professor of Agricultural Engineering Extension, Pennsylvania State College. He's an old timer in extension work and an expert on farm sewage disposal.

What Is a Septic Tank?

Briefly a septic tank is a water-tight enlargement of the sewer which acts as a screen to take out the small proportion of solids contained in the sewage. In the slow passage of the raw sewage across the tank the heavy particles settle to the bottom and form sludge, and the light ones rise to the top, making the scum. Then bacteria get to work and form gasses in the sludge which causes some of the particles of sludge to rise into the scum. The gas bubbles off, and they sink again to the bottom.

Baffles keep a strong current from surging across the tank and washing out the particles in suspension. They also keep the scum from slipping down the outlet and clogging the outlet tile. Nothing but the clear water from the settled sewage, with the liquified part of the solids resulting from the bacterial work, plus possibly the gas produced, should go out the outlet.

The arrangement of fittings shown in the drawing of a concrete tank provides for a vent in only the outlet. The purpose of this vent is to let gases which form in the tank escape through the outlet tile. Good plumbing is also provided with traps and vents to prevent sewer gases coming back into the house. However, all of the farm house plumbing, particularly in the older sections, is not of the best and it is safer not to let the gas



Cross-section of Concrete Septic Tank

Side view of a concrete septic tank as it would appear if cut through the center. The vent in the outlet tile is to let the tank gases escape. The inlet pipe of sewer tile or cast iron has the joints cemented or calked. Outlet tile are open jointed with strips of linoleum or building paper laid over the tops of joints. Planks are set in slots to act as baffles to inflowing and outflowing sewage. The pipe opening indicated in the cover is for measuring the depth of the sludge and pumping it out once in 6 to 10 years with a simple hand pump.

back into the house drains. (A trap is a U, or similar device, in a pipe or fixture which remains full of water, the water acting as a plug to stop the gases from coming into the house from the sewer. A vent is an opening from the waste water piping to the outside air. It permits gases to escape, aids the flow of waste water in the pipes, and prevents draining the water out of the traps.—Editor.)

Size to Use

Tanks are designed to hold all the waste water from the house for a period of a full day. The smaller installations retard it for only eight hours while the bigger ones provide for a day's flow.

The U. S. Public Health Service recommends a tank for a one-family residence holding a minimum of 500 gallons.

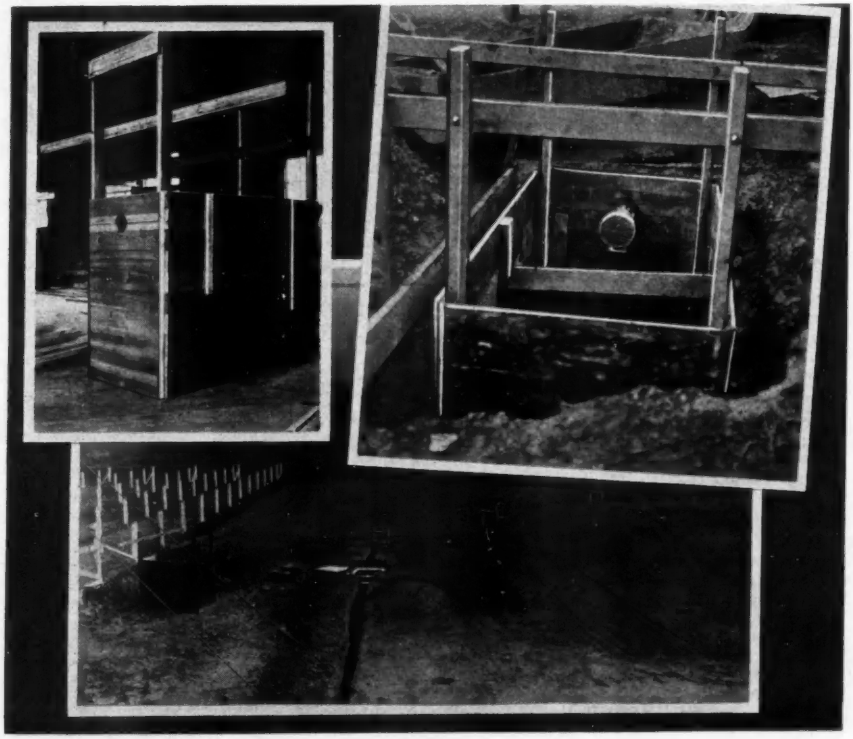
There should be ample space for the storage of sludge and scum. This is provided in the tank shown by a foot in depth at the bottom and top. While the inside depth is four and one-half feet the outlet is down almost a foot and the sludge can get almost 18 inches deep before it washes out into the open joint drain tile. In a well kept tank this will never happen.

Within reason the larger the tank the less often cleaning is needed. The one shown is six feet long and three feet wide. It does very nicely for from six to eight persons in the farm family. Many have gone from 6 to 8 years without cleaning. Most of them give trouble in 10 years unless pumped out. Any tank that does not collect sludge fails in its purpose, for the solids will settle out in the absorption tile unless they are held in the tank.

Final Disposal of Liquid

The absorption tile from a septic tank is just as important as the tank itself. If there are any disease germs in the kitchen or bathroom sewage they will in all probability be in the outflow from the tank, because *the septic tank does not kill germs.*

The water may be clear but it is considered by law in some states to be just as dangerous as raw sewage and the farmer for his own safety should

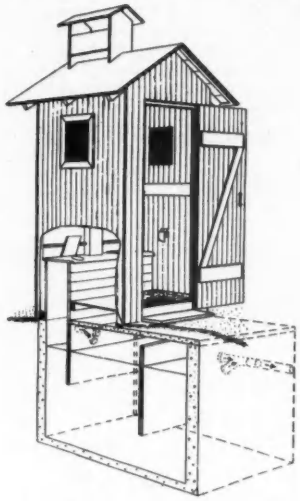


Tank Form and Installation Procedure

Upper left: The inside form for making the tank. No outside form is needed if the earth does not cave in. The strips nailed to the sides leave slots into which to slip the baffle planks. Inlet and outlet tiles are held in place in holes in the ends. The cross 2 x 4's support the form in the excavation. The corners are beveled so forms can be removed after concrete hardens. **Upper right:** Forms and inlet tile in place. Concrete partly poured. **Lower:** Straight sewer line into newly made tank. Discharge tile for seepage of outflow marked by cross bars to give levels. Form removed and standing at left. The form may be used for a number of tanks.

consider it as such. The people who discharge it into cesspools and wells are only fooling themselves and are possibly making trouble for others.

The ideal disposal of the liquid is in one line of



This shows how a septic tank may be used temporarily as a sanitary privy until indoor toilets are installed. Drainage from the kitchen sink supplies water to the tank through the sewer line.

open joint drain tile, laid shallow, with tar paper or linoleum strips over the joints, and a plug at the lower end. That's a lot to say in one sentence, but it does not tell it all. The line should be almost level and from 15 to 24 inches deep, the shallower the better, if the drain tile will not be disturbed by plowing or cultivation.

The yard is a fine location for the tile if the water cannot seep back into the well or spring and there are no trees or shrubs to shade the area. A good sod and top soil acts like blotting paper to draw the liquid upward for the sun and air to work on. A well drained area should be used and if carefully graded no wet spots should result unless leaky fixtures waste a constant drip of water.

The standard 3x6-foot farm tank has usually been installed with 100 feet of absorption tile laid on a grade of 2 to 4 inches per 100 feet. This open-jointed tile should be kept 100 feet away from wells or springs by using cement jointed sewer tile between tank and drain tile, if necessary. Be careful to have a straight run from the cleanout in the sewer pipe in the cellar to the tank, with a fall of about one foot in fifty. That is about far enough to go out. Then check the outlet area. If it is inclined to be wet, drain it first with a tile system and place the tank outlet tile above it. The lower end of the distribution tile should be plugged and never connected to drain tile or emptied into an open ditch.

Where There Is No Bathroom

A kitchen sink may be drained into a similar line of open joint tile if a grease trap like a small septic tank is put at the end of the sewer before discharging into the soil.

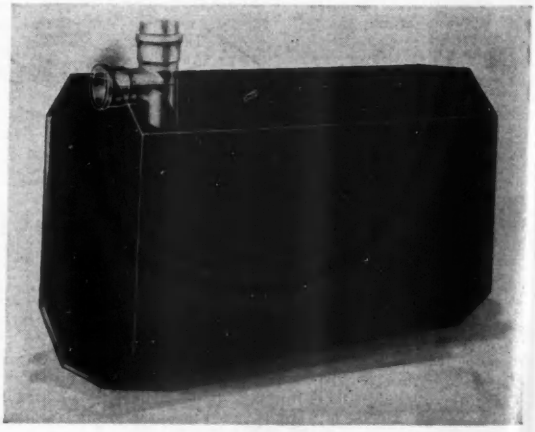
Where there is a chance of later installing a bathroom it would seem wise to provide the regular septic tank to serve as a grease trap and also as a concrete vault for an outside closet. These have been called "Sanitary Privies" in some states. In the design shown, the cover slab over the inlet end is left off and the seat lined up with the end wall and the inlet baffle. This latter should be made tight to below the water level and a large ventilator taken from under the seat to a point above the roof. The covers should be self closing as fly maggots develop in the scum of the inlet end and produce excessive quantities of gas.

With such an arrangement it is possible to later install the bathroom and connect it to the sewer at the inlet "Y" branch as shown in the drawing.

Won't it freeze? Paul P. Korb, the county agent in Tioga County, New York, has a tank in his front yard. He says a light fall of snow always melts in a rectangle over the tank, showing just where it is. The system has been used for a number of years in New York state, where it was first given agricultural extension publicity and a number of similar designs dot the whole Canadian border at customs stations.

* * *

EDITOR'S NOTE: *Mr. Haswell has described a tried and proved type of homemade concrete septic tank. For those who prefer them, there are factory made steel and concrete tanks available. The same principles of operation, installation and disposal of outflow apply.*



A copper bearing steel septic tank with plastic asphalt protective coating inside and outside. Easy to install correctly, non-porous, requires less digging. Pipe shown is cast iron soil pipe inlet from plumbing. Inlet pipe in the corner of the tank extends down proper depth below scum. Sectional cover is easily removable. Factory price about $40.00.

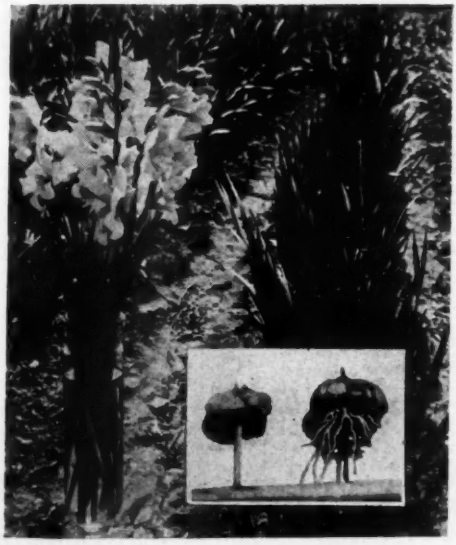
Heated row at left; unheated at right. Same bulbs, same soil; all planted on March 17, 1938. Picture taken June 14.

Electric Soil Heating Cable Helps to Force Early Blooms of Exceptional Quality

EARLY OUTDOOR GLADS

By C. O. BUNNELL
Farm Service Supervisor, Pacific Power & Light Co.
Yakima, Washington

MRS. W. H. RICHIE is a flower grower of Wapato, Washington, with a specialty of gladioli. Three years ago she started forcing "glads" out of doors with the aid of electric heat in order to get the higher prices which go with the early flowers—particularly flowers for Memorial Day. Last year records were kept of power consumption and cost, and pictures were taken of the growth. It was a bad year for planting. Normally the bulbs are put in the latter part of February, but in 1938, because of moisture conditions, they could not be planted until March 11th. The delay made Memorial Day blooms impossible, but the first flowers appeared June 1, and shipments were under way June 10. Even at this time the superior quality of the blooms enabled Mrs. Richie to sell all of her crop and realize 6c per flower.



A sample of forced flowers showing long stems and good quality. Heated row at left. Insert shows typical unheated bulb at left and heated bulb at right.

The heating installation consisted of 1300 feet of No. 19 soil heating cable. It is placed six inches deep in the soil and one or two rows of bulbs planted over it. This bed is normally capable of producing 11,000 salable spikes or separate plants.

Some years the early spring frosts brown and kill the first leaves, but the bulbs with the stimulation of under heat, have proved to have sufficient strength to recover quickly and to produce new leaves. The gladioli seem to have much more vitality when grown in this fashion out of doors and produce spikes of greater length and flowers of superior size and durability than can be produced from bulbs forced in greenhouses. The hardiness of these outdoor blooms permits Seattle wholesalers to ship them successfully as far as Alaska, and the superior carrying quality has brought a premium for Mrs. Richie's flowers in comparison with the ordinary hothouse flower.

In 1938 the electricity consumption for heating by months was

Date	Kw. Hrs.
Mar. 11 to Apr. 5	3542
Apr. 5 to May 5	1147
May 5 to June 6	725
June 6 to June 14	86
Total for season	5482

The cost of the 5482 Kw-hrs. was $104.55 or just slightly under one cent per flower which Mrs. Richie thinks is amply justified by the sales made and the fact that the electric heat produces a larger bulb with a sturdier and more spreading root system, which in turn results in better plants and flowers the next season.

Left: A field of vetiver on the Pine Lawn Farm of W. L. Jennings, Hammond, Louisiana.

Above: Washing dirt from vetiver roots with high pressure stream supplied by a farm water system preparatory to drying and packaging the roots.

Lower Left: Electrically powered vetiver root roller and wrapper.

VETIVER—Or What Have You?

VETIVER is a perfume plant. It is a perennial of the grass family whose aromatic roots impart a pleasingly fragrant odor to clothing and finery. It is one of the most satisfactory sachets grown, its odor persisting for 8 to 10 years.

Mr. Jennings was not satisfied with ordinary crops. He wanted more money, so he searched the forgotten records of crops adapted to Louisiana—and found vetiver. It was introduced into Louisiana from the East Indies before the Civil War and was used as an ornamental and to perfume the wives of the planters, but did not sweeten anyone's pocketbook commercially. The Jennings' crops for 1938 from 8 acres had a value of between $4,000 and $4,500 in addition to leaving roots for propagating 16 acres in 1939.

This is a Louisiana crop. Perhaps there are musty records of specialty crops in your state. Or, do you have anything to wash or bundle? Electricity is a versatile helper.

Electrical HOUSEKEEPING

Conducted by GAIL MEREDITH

If You're Thinking of Buying a Refrigerator

EVERY now and then I hear a woman complain that there are no definite buying guides for household equipment. And she generally seems to mean that she wants some single, impartial agency to set down for her in black and white the best refrigerator to buy, and the second best, and the third. Obviously she is asking for the impossible, because even if standards of performance and construction could be scored and rated, there would still be differences of opinion on the relative value and importance of the convenience and appearance of different makes and models.

And all the while she is overlooking entirely the many agencies that have studied equipment in their laboratories for years, and are able to help any woman choose her own refrigerator wisely.

The Home Economics Department of the U. S. D. A., the American Home Economics Association, various state colleges, and experts on the staffs of women's magazines have made recommendations that are a very comprehensive guide to the wise selection of a refrigerator.

In the first place everyone seems to agree that the manufacturer of a refrigerator is of prime importance. To be assured of a good refrigerator, you should buy from a firm that has an established reputation for the quality of its merchandise.

Sometimes you will hear folks say, "Oh, she's just paying for a name." But it is more than that; she is paying for what the name stands for. You get a considerable guarantee with a refrigerator you buy these days. Sometimes it covers as long

Left: You can push this handle right or left or in or out to open the door of this beautiful refrigerator. **Right:** The lower half of this box, shut off from the top by a glass shelf, has refrigeration lines behind the porcelain lining. The air does not pass over the chilling unit and is moist instead of dry. Since it cannot dry out the foods, they may be put away in this part of the refrigerator uncovered.

a time as five years. You want that guarantee in writing, and you like to feel that its signer is going to be in business to keep his word if you should need to claim an adjustment under its terms.

That means that the dealer who handles the merchandise must be an established and reputable

This special compartment in the very coldest part of the refrigerator is designed for meat or fish or fowl.

member of your community, too, for he is the go-between for you and the manufacturer. Consider his business standing and permanence when you buy. He is the man you will call up for service should your refrigerator need any minor adjustments, and you want that service prompt and satisfactory.

Then there is further reason for care in the choice of the manufacturer. You cannot tell much about those two most important features in a refrigerator, the insulation and the operating mechanism, just by looking at it. You have to depend for their quality on the integrity of their maker.

You know how important the refrigerating mechanism is. It must go on steadily to keep the box cold. And the insulation must shut the heat out of the cooled box. It is very important both for your satisfaction in the refrigerator and for economy of operation. Dr. Louise Peet of Iowa State College says that it has become more and more apparent as investigations have been carried on that most of the heat comes through the walls of the refrigerator, not by opening the door, or even putting in warm foods.

Probably the next matter for decision is size. As a result of many years of observations these various agencies are practically unanimous in suggesting that you be sure, right at the start, that you are getting a refrigerator big enough to meet all your needs.

If you aren't sure by looking at it, you will do well to follow the advice of Miss Ella Cushman of the New York College of Home Economics at Cornell University. Miss Cushman suggests that you make a paper pattern of the shelves of the refrigerator you are considering. Then that you go home and lay those patterns out on your work table, get together dishes and jars of all kinds, enough to hold the kinds and amounts of food you expect to keep in your refrigerator. Then set those containers on the paper pattern and draw around each one, leaving room between the containers for air to circulate freely. It will help you in studying the layout to jot down, inside the lines, the name of each food, too.

Don't forget to consider the space for tall bottles, and the space between the shelves.

The amount of room in the chilling unit for ice cubes or for frozen desserts, and the space for storing frozen foods from your locker in town may be important to you.

Last of all, but by no means last in importance, check the height and width and depth of the refrigerator with the space where you want it to stand.

Now while you cannot see through a steel wall, nor into a running mechanism, there are certain points in the construction of a refrigerator you can measure with your own eyes. You know it should have a sturdy cabinet, and that the hardware should be well made and strong. The door ought to open easily and close with a push of your shoulder or arm. That means hinges that will not let the door sag out of place and a latch that operates smoothly. The hardware should not rust or tarnish. Look for a good rubber gasket around the door to help shut out the warm air.

Inside the box you want a porcelain enamel lining that will be acid resisting, and that will neither chip nor absorb odors.

As for the shelves, see that they are strong so they will not sag out of shape, that they are made of rust-proof metal, and that their bars are flat and close enough together to keep small bottles from toppling over between.

Then there is the matter of convenience to consider, too. In the first place, the box must be easy to reach into without stooping. Some of the new boxes this year are slightly shallower from front to back, so you can get at the food more easily.

If the shelves are adjustable in height and sections are removable to let in a watermelon or a turkey, you will find them more convenient. When the shelves slide out, make sure they have a good catch so they will not tip forward when you pull on them.

The opening of the door should be toward your work space, so watch the way the door is hung when you buy.

A light on the inside of the refrigerator helps you see just what is there, and reminds you to keep the box spotlessly clean.

Which brings us again to the importance of that porcelain lining, and to rounded corners and walls without a seam, no places to catch the dirt. Even the fixtures that support the shelves should be easy to clean around. Beware of designs that offer inaccessible spots or rough edges to catch a cleaning cloth.

Ice cube trays should come out easily; the ice cubes themselves be easy to get, one or a dozen, when you want them in a hurry.

• • •

Care of the Electric Sewing Machine

AN electric sewing machine can easily be kept in good condition with the observance of a few simple rules. First of all, it is best to keep the machine closed when not in use. This keeps

"WHY I WOULD LIKE AN ELECTRIC WATER HEATER"

(Winning Letter for January Contest)

I am the wife of a "dirt farmer" and two of my sons are serving their apprenticeships on the farm. If you should drive by some Monday and see the line of overalls, overall jackets and shirts flapping in the wind you would understand that I use the expression "dirt farmer" not only as a figure of speech but as a literal fact. That line of overalls, shirts, etc., is my principal reason for desiring an electric water heater; such a heater means an abundance of hot water without the labor and bother of building up a big fire and filling a wash boiler.

When so much time is spent by the farmer tilling the soil and choring around the barns, what is more satisfying after the evening chores than a tub of warm, sudsy water to wash away not only the grime and perspiration of the day, but much of the fatigue as well?—so that's another reason.

Hot water at any time for dishwashing, for cleaning, etc., surely sounds like a pleasant dream for overworked farm women. An electric water heater saves time, and on a farm time is money—or used to be—for the time saved can be devoted to more productive tasks.

An abundance of warm water is an aid to health. Sickness is expensive in labor lost, as well as in doctors' bills and medicine.

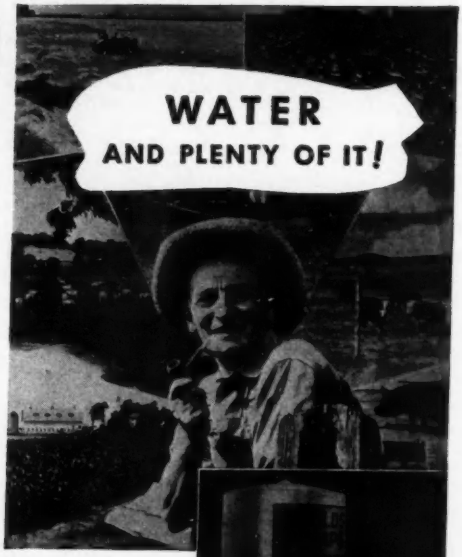
Like so many farm women, my hobby is poultry. Heated buildings, electric lights to lengthen the day, etc., all help egg production, but I'm wondering if anything contributes to the health of the laying flock and peps up egg production quite as much as an abundance of warm drinking water before them at all times. Having water at proper temperature in winter means that much more will be consumed, and since eggs are so largely water, egg production is greatly increased. Actual figures by those who have tried it prove the value of warm water for poultry. This is, of course, true of other live stock. It pays in dollars and cents to take the chill off their drinking water.

We live in Clark County, Wisconsin, in the heart of the dairy section, so there are milk utensils to be cleaned and sterilized every day. As we all know, hot water is one of the most important tools in properly cleaning utensils.

Hot water at just the necessary temperature is more easily available with an electric heater than with any other type of heater commonly found on the farm.

I presume the whole subject could be summed up in these words: I desire an electric water heater because I want the maximum of satisfaction from a minimum of labor and expense.

MRS. M. PATTERSON,
R. F. D. No. 2,
Granton, Wisconsin.

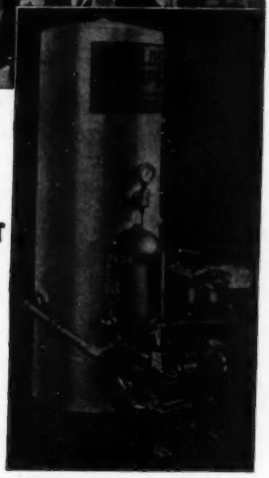


for

CONTENTMENT

and

SECURITY



Goulds CID water supply system for shallow wells.

Successful farmers know that not merely water, but a supply adequate for the tomorrows, is the key to contentment and security. They know too that with a Goulds CID Water System they can have enough water always for use in field, barn and house—for crops, stock, convenience, sanitation and fire protection. Why? Because Goulds CID Water Systems, with their quiet, smooth running pumps, are built to move the maximum amount of water for the lowest cost—over a period of many years.

Your local dealer can show you a Goulds CID Water System that will give you too the contentment and security that come with plenty of water always available.

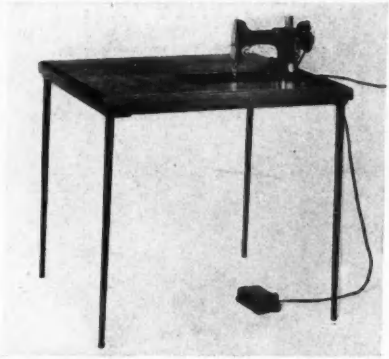
GOULDS PUMPS, Inc., 340 Fall St., Seneca Falls, N. Y.

GOULDS

8891

the dust from the head, and gives you the table space the cabinet supplies. When the plug is to be extracted from the outlet, the plug should be pulled, and not the cord.

When the machine is in constant use, the head should be oiled about once every three weeks. A



moderate amount of oil should be used, and for the head only. Lubricant grease should be used for the motor, but not for the head. It is best to oil after using the machine. Be careful not to oil too much. Wipe off excess oil before closing machine. Run a scrap of material through the machine and leave it under the presser foot until the machine is again used.

Be sure the needle is in properly, and securely fastened. You may adjust the tensions and the stitch size, but it is advisable not to tinker with the mechanism. Attention to these few suggestions will help you to keep your sewing machine in the best of condition.

L. DESMET.

• • •

"Pin Money" with a Sewing Machine

"The picture on your June cover last year made me realize how much time and money I have saved by using my electric sewing machine that I bought four years ago. During this time I have made practically all of my own as well as my children's clothes. By doing that I have saved enough to pay for my machine.

"For the last three years, I have made big pin money besides, by entering my sewing at the Upper Peninsula State Fair in Escanaba. I am proud to say that I have "brought home the bacon" every time.

"Last year one of the large stores awarded me a duplicate check for having purchased the materials used in my garments from them. This doubled my profits. With two children and a housewife's duties, this would have been impossible had I used an ordinary machine."

ZOLA BEAUCHAMP,
Gladstone, Mich.

Last June's cover showed the making of a bride's dress.—EDITOR.

• • •

Mrs. Ballard Makes Electricity Pay Profits

MR. and Mrs. B. F. Ballard have always lived on a Mississippi farm. When electric power became available they took advantage of it largely because they wanted lights and water. They thought very little about the extra comforts that might be added to the home and practically nothing at all about it being a means of adding to the family income.

After purchasing the first equipment, which consisted of a stove and refrigerator, they decided the kitchen must be remodeled. Mrs. Ballard, who sells on the home demonstration club market once each week, found these two appliances a great help in preparing the foods she sells, so she soon began the plan for others. Christmas came and one of the daughters gave her a mixer. This gift resulted in a two-fold saving. The labor of cake-mixing was abolished. In addition she soon found it took less materials, particularly eggs, in her baking. As they were able they added other equipment and now the farm has a water pump, a washing machine, a radio, lights, heater, mixer, stove, iron and refrigerator.

Last year's market reports show that she sold $561.81 worth of food products. Cakes brought her $370.37, bread $42.10, rolls $39.20, pies $48.40, chickens $47.12 and miscellaneous $14.62. The grocery bill for the above named articles was $145.14. Power for the home and farm was $160.14, which was paid for from her baking. A neat profit was left after paying for these things. Without electricity and electrical appliances she could not have had the sales, for she would not have been able to do all this work.

MYRTLE KIMES,
Home Demonstration Agent,
Tupelo, Miss.

• • •

Liver and Bacon Loaf

1½ lbs. liver, scalded
4 slices bacon
¼ cup chopped onion
2 shredded wheat biscuits crumbled
3 beaten eggs
1 cup milk
¾ cup corn meal
2 tsp. salt
⅛ tsp. pepper
1 tsp. powdered sage
½ cup tomato catsup
4 to 6 slices bacon

Force the scalded liver and 4 slices of bacon through the food chopper, using the medium blade. Add remaining ingredients and mix thoroughly. Place in a loaf pan lined with sliced bacon. Arrange several slices of bacon on top. Bake in roaster that has been preheated to 400 degrees. Bake one hour. This makes a delicious sandwich meat when cold.

April Contest

Most of us welcome ideas that save work, and most of us are on the lookout for tools that save work. Sometimes we get a little extra saving by putting the two together.

Anyhow, this is the month we'd like to have you write us the reason why the electricity that runs your ——— saves the most work at your house. You fill in the blank according to your experience—and tell us—in not too many words—the reason for your choice.

We will pay five dollars for the winning letter, and one dollar apiece for any others we publish.

Send in your letter by April 20, 1939, to Gail Meredith, 1026 Seminole Highway, Madison, Wisconsin.

Only 20c a Week? Well "Blow Me Down!"

According to I. P. Blauser of the Agricultural Engineering department at Ohio State University, if a man were able to pump 300 gallons of water an hour, he would have to work nearly 417 hours to pump 125,000 gallons. At 25 cents an hour, the labor would amount to $104.25.

But on one of the farms served by the experimental electric power line out of Marysville, Ohio, it cost only $10.30 to pump 125,000 gallons of water (Less than 20 cents a week). If a man were to compete with an electric motor for pumping water, he would earn less than 2½ cents an hour by pumping at the rate of 300 gallons an hour.

In another appraisal of the amount of household labor saved by pressure water systems on farms being served by new electric power lines, Blauser estimates the amount of water used for household purposes in homes where the water is carried, at approximately 12,000 gallons a year. This is 50 tons.

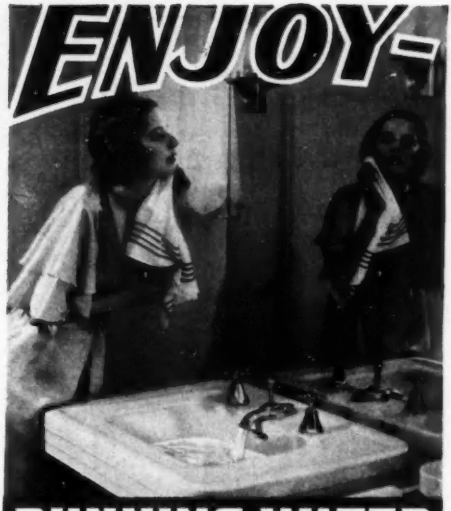
He says that to pump and carry that amount of water would require the time of one person—too often the homemaker—for more than two weeks. Carrying heavy pails, she would have to walk about 100 miles.

4-H Clubs Undertake to Reduce Farm Fires

New York State's 30,000 members of 4-H clubs are engaged in a State-wide campaign for farm fire prevention. In their club meetings they will make a study of farm fire hazards; at home they will determine what fire hazards are present and try to correct any they discover.

In the United States the loss from farm fires alone is said to be about $75,000 a day. One farm in every thirty-seven has suffered a loss from fire in the past five years. A farm fire occurs somewhere about every fifteen minutes.

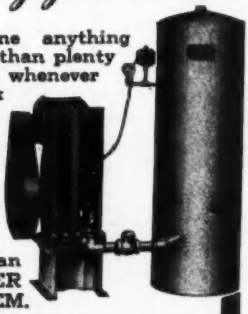
"Before you demonstrate it any more, will you help me find Junior? He gets into everything."



RUNNING WATER

AT A *Surprisingly* LOW PRICE

CAN you imagine anything more enjoyable than plenty of running water whenever you want it? Think of the **time** and **labor** it **saves** in the barn—it's **convenience** in the kitchen, and it's **comfort** in the bathroom. ● Enjoy running water everywhere with an AERMOTOR WATER SYSTEM.



● And right now every AERMOTOR System is priced **surprisingly low.** Still quality is higher and these units are better than ever. ● Before buying any water system examine an AERMOTOR. You'll see immediately why it offers you most for your money. Take advantage of these attractive prices and save money.

● Get the facts . . .

MAIL COUPON NOW

Dept. E-4
Gentlemen: Please send FREE copy of your "FACTS" Book about AERMOTOR WATER SYSTEMS.

Name_____

Address_____

AERMOTOR CO. 2500 ROOSEVELT ROAD CHICAGO, ILLINOIS

Mr. Logan says this automatic hot water heater saves time in scalding chickens.

Leebert Logan Cuts Chicken Picking Time with Electric Water Heater

By MARY MARGARET LYNCH

OPERATING a chicken hatchery with an incubator capacity of forty-seven thousand eggs and an annual hatch of one hundred and seventy-seven thousand chicks is enough to keep a man busy. But Leebert Logan, hatchery operator of London Grove, Pennsylvania, makes good use of electricity to manage a profitable sideline—filling short orders for dressed poultry.

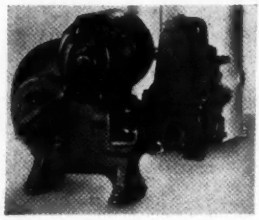
A thirty gallon tank with a thermostatically-controlled electric hot water heater, automatically produces a continuous supply of the hot water needed for scalding chickens. Before the heater was installed, water had to be heated in kettles and tubs, a long and awkward process. Now the water in the tank is kept at a temperature of one hundred and eighty degrees, so that at the time the chickens are actually scalded, it is always up to the desired temperature.

The minimum charge for operating the heater is two dollars a month. Mr. Logan says that the bill has never gone over the minimum in spite of the fact that the hot water from the tank is also used for a shower in the dormitory over the main hatchery.

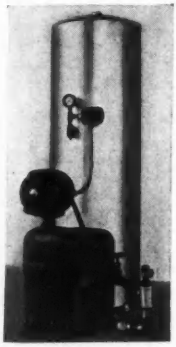
Both Mr. and Mrs. Logan are enthusiastic boosters for electrical appliances. The Logan hatchery, one of the most modern in southeastern Pennsylvania, is not yet ten years old. One of the most attractive features of the place is the house, which is almost completely electrically equipped. Mr. Logan says that his bill for electricity, which may total ninety dollars a month, pays for work well and efficiently done and permits a real saving of time and labor.

HERE'S THE PUMP YOU'VE BEEN LOOKING FOR . . . . .

. . . Compare the Features!



Woodmanse Electric Shallow Well Pumping Unit is ideal for any home water service or general pumping purpose. Precision-built, sturdy and compact. Complete and ready to install. Motor of the dependable repulsion-induction type for 110–220-volt, 60-cycle, single-phase alternating current. Automatic pressure switch, and relief valve are included. Pressure range, 20–40 pounds.



The clean-cut modern design—the great simplicity and compactness of the Woodmanse Electric Deep Well Pumping Unit—makes it an unusual buy. Mechanism in perfect balance. All working parts in pairs and especially sizable. Precision built and run in oil bath. Remarkably efficient and quiet. Dependable and economical.

Woodmanse Model #20 Pump Jack driving a Windmill Head Force Pump. A complete Power Plant. Recommended for service on wells up to 300 feet. Comes with either V-type sheet metal pulley or cast iron pulley.

WOODMANSE MANUFACTURING COMPANY, Freeport, Ill.

Write for Complete Descriptive Circular

ON THE AIR

Conducted by
JEROME J. HENRY

About Donna Dae

DONNA DAE, 17-year-old singer with Fred Waring's band, is exactly five feet two inches tall, has the eyes of blue which ideally accompany these measurements in a certain popular song, and she weighs exactly 100 pounds.

The fact that she is pleasantly petite is probably one reason why she was chosen to fill the spot left vacant by the Lane Sisters. For the conductor is no giant himself and he likes a little contrast when he appears on the stage—contrast between his height and that of his girl singers.

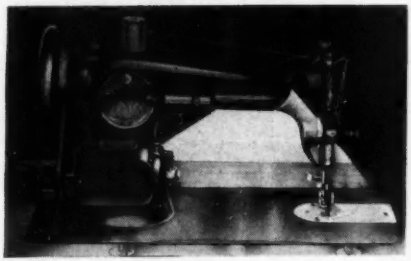
Donna Dae's real name is Donna Rae Cooper.

Ransom Sherman's daughter Ann follows her daddy's example is trying to write a little bit for radio.

Her father had a four-piece band which played in Nebraska. His pianist was a young girl whom he married. Donna was born in O'Neill, Nebraska, when her mother was 17. During her early childhood Donna was often "parked" behind her mother's piano in a clothes basket while the harmony four played dance engagements. Donna took naturally to singing and dancing. Until Waring signed her, there was some indecision as to which was her greatest talent.

Donna first appeared on the radio when she was nine. It was in Chicago that Donna met Waring. His orchestra was there on a personal appearance date following the filming of their motion picture, "Varsity Show." He dropped in a prominent restaurant where Donna was singing one night. There he offered her a job. She joined the gang during a prolonged engagement at a New York theatre, accompanied the band on a tour of southern cities,

TURN YOUR TREADLE into an electric!



Fits on old machine

If your old sewing machine is too good to give away or trade in—let us fix it up with a modern electric Singer motor, complete with sewing light. Costs little, makes sewing twice as easy!

No more pumping! No more jerks!

This Singer motor has a foot control device which gives perfect control of sewing speed. You can sew all day without fatigue. Sewing light permits night sewing. A Singer Service Man will attach it to your machine in a few minutes—no extra charge for installation. Fill out the coupon for further information.

SINGER

Sewing Machine Company

SINGER SEWING MACHINE CO.
Dept. 731-D—149 Broadway, New York, N. Y.

☐ Please send a Singer Service Man with full information. It is understood there is no obligation.

☐ Please send an illustrated catalogue of new Singer electric sewing machines and appliances.

Name _____

Town _____

County _____

State _____

Copyright U. S. A. 1936, 1939, by The Singer Manufacturing Co.
All rights reserved for all countries

MODERN FARM LIGHTING

BENJAMIN

YARD LIGHT

Light your farm yards and you'll get the rush work done on time!

Here's an inexpensive Yard light for your farm that will make you wonder how you ever got along without it! Manufactured by Benjamin, world leader in lighting equipment, this reflector is made of lifetime porcelain enameled steel. Easy to keep clean. Comes packaged ready for installation. Nothing else to buy. Package contains reflector, socket, conduit arm, wall fitting, bolts and 2 ft. wire leads.

SEE YOUR ELECTRICAL STORE OR WRITE THE BENJAMIN ELECTRIC MFG. CO. DES PLAINES, ILL.

BENJAMIN

VARIETY-LITE

NEW LOW COST PORTABLE FLOODLIGHT FOR FARM FUN

on the farm! Think of how your family and friends will enjoy a yard floodlighted for night sports, night parties, etc. Provides protection against prowlers, too! Use it for night work. Take it from one location to another. A quality product made of lifetime porcelain enameled steel. Complete with unbreakable plug and extension cord . . . efficient—low priced.

BENJAMIN LIGHTING EQUIPMENT

Distributed Exclusively Through Electrical Wholesalers

ESCO MILK COOLING

Faster at Lower Cost

ESCO "NI-AG-RA"

This new cooler gives you faster and better milk cooling because the patented Neck-High Water Leveler always keeps the cans in "up to their chins" . . . whether one can, half or full capacity is in place. This constant level is maintained automatically . . . no valves to turn . . . no dummy cans needed.

NO OTHER MILK COOLER HAS ALL THESE EXCLUSIVE FEATURES

You get: Lower Bacteria Count . . . Higher Quality Milk . . . and Better Profits—All at a surprisingly low operating cost. Be sure to see the Esco "NI-AG-RA" before you buy your milk cooler. **Send coupon or postcard TODAY for prices and full details.**

ESCO CABINET CO. 723 E. Biddle St. West Chester, Pa.

Gentlemen: I am shipping ..... cans of milk a day. Send FREE descriptive booklet on the ESCO "NI-AG-RA."

Name.....

Address.....

P. O.... ....State.....

and remained with the orchestra when the series of radio programs was begun over a nation-wide network in the fall of 1938.

• • •

A Thousand Times No

BING CROSBY got a 10,000 line, 60,000 word "fan letter" from a person in Illinois. The letter consisted of one line, "Tasha is a swell string scraper," written 10,000 times.

The story goes back to the time Crosby introduced a certain guest in his radio program. The guest was Toscha Seidel, the violinist. Crosby stated that any listener who had never heard Seidel on the air before should go in a corner and write, "Toscha is a swell string scraper" 10,000 times.

Joan Winters, pretty radio actress. She hails from Dayton, Ohio.

Just for devilment, the listener wrote, I did it in my spare time. For his labors the fan got a picture of Crosby, and a note, "You misspelled Toscha 10,000 times."

Two Cows and Six Isms

1. **SOCIALISM**—If you have two cows, you give one to your neighbor.
2. **COMMUNISM**—You give both cows to the government, which gives you back some milk.
3. **FASCISM**—You keep the cows, but give the milk to the government, which gives you back some of it.
4. **NAZISM**—You keep the cows, but give the milk to the government, which gives you back a little of the skimmed milk.
5. **NEW DEALISM**—You shoot one cow and the government pays you not to milk the other.
6. **CAPITALISM**—You keep both cows, milk them, sell the milk and buy a bull.

Ignatz.

QUESTIONS and ANSWERS

Oven Canning of Meat

Question: *I am seeking information on how to can meat in my electric oven.* Mrs. S. C., Illinois.

Answer: No authority on canning that we know of now recommends oven canning of meats or vegetables other than tomatoes. Use a pressure cooker to be safe. The oven is satisfactory for acid fruits and vegetables.

Remaking Table Lamps

Question: *Will the method described in your last September issue for remaking a bridge lamp for 60c work also with table lamps?* M. D. W., Ind.

Answer: These same adapter units will be equally satisfactory on table lamps providing the base of the lamp is large and heavy enough to make it stable.

Cleaning Open-Coil Range Units

Question: *Please advise me how I can clean the black and dirty open-coil units on the second-hand range I bought.* Mrs. A. C., New York.

Answer: It is difficult to whiten discolored bricks. Lift out the unit and carefully shake and brush crumbs and loose dirt out of the coils with a soft brush. Scrape and scrub the brick with Dutch Cleanser. Use fine steel wool on the chromium rim. One manufacturer says large kettles of cold liquid heated for long periods, as soup stock, will help whiten the brick.

Changing Oil Incubator to Electric

Question: *How can I change my Super Hatcher, water tube, oil burning incubator to electric heat? Where can I get a suitable heater and thermostat?* J. E. A., Pennsylvania.

Answer: There are two ways. The best one is to abandon the water tubes and install low temperature heating elements above the trays. The other method is to use an electric heating element in place of your oil burner. This will cost much more to operate and is more likely to burn out. The Lyon Electric Co., San Diego, Cal., sells both equipments and sends plans for installing.

110 Volts for Engine Ignition

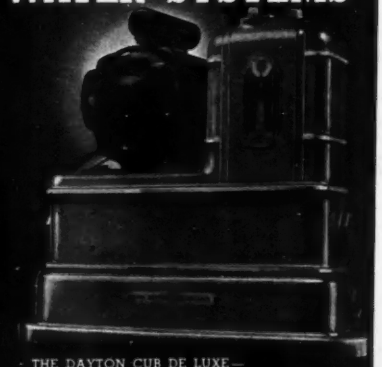
Question: *I have a 3 h.p. gas engine using coil and spark plug with 6 volt battery. Could I use 110 volt A.C. current in place of the battery by using a bell-ringing transformer? Or, can I use 110 volts for ignition on my engine without transformation?* H. E. J., Ind.

Answer: We would not advise attempting to use 110 volt A.C. current for engine ignition either directly or through a bell-ringing transformer. The

DAYTON DeLuxe WATER SYSTEMS

bring you PACKAGED "City Water Service"

WATER SUPPLY SYSTEMS Dayton WATER SOFTENERS



THE DAYTON CUB DE LUXE— one of many models in the finest line of water systems in America. Capacity 250 to 310 gals. per hr. through Automatic Capacity Control.

PLENTY of water under pressure in house, garden, stables—WHEN you require it—is assured with a DAYTON De Luxe Water System. DAYTON'S exclusive Automatic Capacity Control increases capacity from 250 gallons per hour up to 310 gallons per hour, when your water demands require greater supply.

The DAYTON De Luxe is electric water supply service in a modern, newly designed unit—replete with every modern feature that means dependable, economical long-life service. All models for deep and shallow wells may now be purchased from Dayton Dealers on a new long term EASY payment plan. There's a DAYTON Dealer near you. Use coupon for free, illustrated booklet.

SEND NOW

Dayton Pump & Mfg. Co.,
Dept. E-4, Dayton, Ohio.
Please send me a copy of your free booklet on Dayton Water Systems.

Name_____

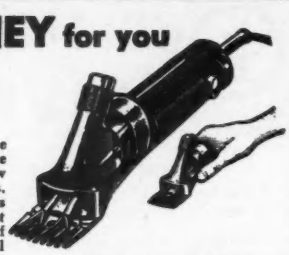
Street or R. F. D._____

City_____ State_____

THE DAYTON PUMP & MFG. CO.
DAYTON, OHIO

MORE WOOL and MORE MONEY for you

STEWART SHEARMASTER



Get 10% more wool from same sheep or goats with the fast, easy-to-use Shearmaster. Has 78% more powerful ball-bearing, fan-cooled motor inside the special EASY-GRIP handle—diameter barely 2 inches. Extra powerful. New professional type Tension Control. Removes fleece from sheep in a few minutes. No second cuts. Longer fibre wool grades better—brings more money. Saves time—work. Shearmaster, complete with 2 combs and 4 cutters, only $22.95 at your dealer's or send us $2.00. Pay balance on arrival. Slightly higher west of Denver. Write for new Stewart bulletin, "Harvesting the Farm Flock Wool Crop," and FREE catalog of Stewart electric and hand-power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Co., 5524 Roosevelt Road, Chicago, Illinois. 50 *years making Quality products.*

DOES A QUICK, SLICK JOB

spark requires a higher voltage than 110, and coils or other sparking devices used on stationary engines are not usually designed for using alternating current.

Flowing Well Stops Flowing Will Pump Increase Flow?

Question: *Nine years ago I drilled a* 91 *ft. well, cased* 80 *ft. It flowed a ¾ in. stream for several years, and then for no apparent reason slowed down to a trickle. Would it be advisable to install a pump or have a driller clean out the well?*

R. B. L., New York.

Answer: Try measuring the depth of the well with a weighted line to see if it has filled. If it has, have it cleaned with a sand bucket. If it has not filled, or if cleaning does not restore the flow, a shallow well pump of any of the common types should solve your problem.

Ear Corn Grinding — Motor vs. Tractor — Motor Efficiency at ½ Load

Question: *How would an electric motor of* 7½-10 *h.p. compare in cost of operation on a feed grinder with a tractor using* 12c *gasoline? I have a* 3 *h.p. motor for my sheller and grain elevator, but it is a bit small for my hay hoist. Would the economy of a* 5 *over a* 7½ *or* 10 *h.p. motor make up for the additional time needed if I used the motor for grinding ear corn?*

C. N., Indiana.

Answer: I would recommend a 10 h.p. motor if you are grinding large quantities of ear corn regularly; or better, shell the corn and use your 3 h.p. motor for grinding. Assuming your tractor to consume 1½ gal. per hr., the fuel cost would be about the same as electricity for a 10 h.p. motor at 3c per kw-hr. It would be much less costly to use a 10 h.p. motor on a 5 h.p. job for a week or two out of the year than to feed ear corn slowly by hand. The efficiency of the motor would drop off less than 5% at half load and might cost 15c extra for two weeks of hay hoisting at 3c per kw-hr., or less than hour's time.

Fuses, Switches and Breakers for Motors

Question: *Can I buy outlet boxes and plugs for a* 3 *H.P. single phase* 220 *volt motor which I plan to use for sawing wood, grinding feed, etc., and which I plan to use at different points on the farm? Could a switch be placed on the motor instead of on the outlet? What size fuse should be used in the switch? What is a thermal breaker and where can I get one if I should use it?*

E. E. S., Wis.

Answer: Heavy duty plugs and receptacles and thermal switches or breakers are made by a number of companies and may be obtained from most any jobber of motors and electrical supplies. Use 40 amp. fuses and place them at the point where the wiring starts. That is usually at the entrance

YOU NEED IT

Results Amaze Dairy Industry

Again Perfection Engineers take the lead and bring you the New MILK-MASTER—the life-like machine in which suction is automatically adjusted for each teat. This amazing feature assures gentle, soothing action—faster milking, more milk and MORE PROFITS. . . . You and the MILK-MASTER can do the work of three men hand-milking. It will leave you time for other jobs or for recreation. See the MILK-MASTER at your dealer's—ask him for a demonstration—or write us for folder.

MILK-MASTER

PERFECTION MFG. CORPORATION

2108 East Hennepin Avenue Minneapolis, Minnesota

BE SURE TO SEE THE

BURKS

SUPER TURBINE

WORLD'S FINEST

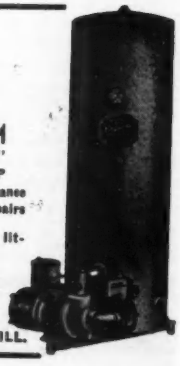
WATER SYSTEM

"With Only One Moving Part"

BEFORE YOU BUY A PUMP

NO Gears To interrupt performance
Pulleys
Liners To make costly repairs necessary
Pistons
Belts To crush inquisitive little fingers
Cranks
Chains Lifts water 28 feet
Leathers
Valves Lowest operating cost

"A Burks Costs Less in the Long Run"



DECATUR PUMP CO., DECATUR, ILL.

switch or main distribution panel. The fuses protect the wiring, not the motor. A thermal switch contains an element which heats up and opens the circuit when the motor becomes overloaded. It can be reset after the device has cooled off. These thermal switches may be attached to the motor frame or to an upright board fastened to the skids or base on which the motor is mounted.

Honestly, Isn't It Cheaper to Use Coal Than Electricity for Brooding

Question: *In your January, 1939, issue on page 26 in answer to a question on electric house heating you state, "In northern climates electricity can hardly compete with other fuels as yet on a cost basis." Isn't this true for brooding also? I own four electric brooders. Be truthful to me.*
Box 102, Mass.

Answer: You have asked a very fair question. A number of years ago at Oregon State College, with electricity at 3c per kw-hr. the cost was slightly less than coal brooding with coal at $17.00 per ton and less than oil brooding with oil at 15c per gal. Studies of brooding on 60 farms in Indiana from 1929 to 1934, gave an average power cost per chick raised of 1.55c or 0.516 Kw.-hrs. used.

At a Rural Electrification Conference at Purdue University in 1930, the following comparative costs per brood for brooding were given:

Electricity—105 Kw-hrs. at 3c—$3.15 for the season.

Coal—0.42 tons at $16.00—$6.72 for the season.

Oil—32 gallons at 17c—$5.44 for the season.

Other more recent tests have been made with similar results. There is great difference between heating houses with electricity and heating brooders. In houses there are large volumes of air and areas of wall to be heated whereas with the electric hover only a small space is heated such as would be occupied by the chicks under a hen. Your own relative costs will depend on what you would have to pay for suitable coal and for electricity. In some places electricity might cost more, but be truthful with me, is'nt it worth it?

Wind Machines for Frost Protection

Question: *Are wind machines successful in preventing frost damage? How many wind makers would be required on five acres?* A. D., Indiana.

Answer: Wind machines have protected against frost in some California fruit sections where conditions were just right and where the rise in temperature necessary was only about 3°. One large blower has handled as much as 35 acres. Blowers depend on mixing the warmer upper air, at say 20 to 60 ft., with the colder air next to the ground. The upper air is not always warmer, however, and breezes seem to upset the functioning of the blowers. The whole matter seems still to be in the experimental stage.

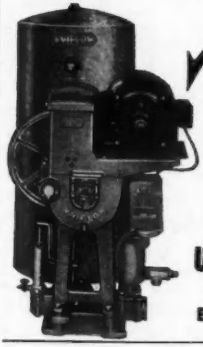
Homemade Chick Brooder

Question: *Could a brooder be made at home for chickens similar to the one described in the February issue for pigs?* Mrs. C. M. S., Illinois.

Answer: Yes, but it is not so simple. Chick brooders have to be built right or you will lose your chicks. Some colleges issue plans for homemade brooders and one company sells parts for

Compare
UNIFLOW Deep
WELL SYSTEMS WITH
THE FIELD · · · ·

LOW PRICES!



✓ Double sets of spiral cut gears with three teeth in sliding mesh is one reason why they are so quiet. Gears and all parts run in a bath of oil, all totally enclosed.

✓ The load is lifted straight up. No rocker arms or walking beams. No straining side pull. For this reason and the use of expensive special cut gears and perfect lubrication, the cost of pumping water is low.

Differential cylinder furnished with every pump, which divides the motor load on up and down strokes, pumping water on up stroke as well as down. This makes an even stream of water and keeps load on motor steady. It eliminates the use of a stuffing box.

UNIFLOW MFG. CO.
1508 East Lake Road
Erie Pennsylvania

The BREATH of LIFE
— — to thousands since 1909

Terpezone brings to any room of your home an artificial mountain air—many times intensified—which for 29 years has proven beneficial in such troubles as Sinusitis, Catarrh, Bronchitis, Anemia, etc. This pleasant, healing vapor tends to build up the deficient blood stream and it acts upon the membranes of the nose and throat in many chronic respiratory diseases.

Rent a Terpezone Generator
(with purchase option)

Let results in YOUR case decide your purchase. Operation from ordinary light socket or farm lighting plant.

Write for free information and learn what Terpezone is doing for others

Terpezone Incorporated
744 Washington Blvd. Chicago, Illinois

IT'S THRIFTY TO BUY A

DURO

PUMP OR WATER SYSTEM

Because your Duro Water System actually saves you money. Provides a clean, healthful water supply. Helps prevent sickness and loss of time. Insures fresh water for live stock. More yield—more profits. Affords better fire potection.

THESE DURO FEATURES SAVE YOU MONEY

- Less Current Required
- Automatic • Less Attention
- Self Oiling • Longer Life
- More Gallons per dollar

Send for FREE book *"Running Water"* today .

DURO Automatic Water System

The DURO Co.

567 E. Monument Ave. Dayton, Ohio

Water Systems — Electric Pumps — Water Softeners — Water Heaters — Water Filters

several types of homemade brooders. We recommend proved commercial equipment, if you can afford it.

Burglar Alarm

Question: *Am going to enclose 15 small chicken coops with a low fence. Is it possible to attach a burglar alarm to this fence? Who can tell me how?* H. D. B., Jr., Maryland.

Answer: Yes. The Extension Agricultural Engineer of any State College in the Northeast, including Maryland, can send you blueprinted instructions. The Univ. of N. H., Durham, N. H., has Exten. Cir. No. 171 on the subject. The Lyon Electric Co., San Diego, Cal., sells them.

Power and Wires for Pumping

Question: *Will a ¾ h.p. electric motor furnish ample power to run a water pump, 5" dia. x 5" stroke, jacked down to 20 r.p.m. (40 strokes), against max. pressure of 35 lbs? Or should the motor be 1 h.p.?*

Will a two wire, No. 8 circuit carry ample current, to supply either motor, plus 5-40 watt lamps, at a distance of 200 feet from the entrance switch?

Should such motors be protected against possible overload, and how? J. L. B., Mass.

Answer: You should use a 1 horsepower motor on your pump. I assume this is a deep well pump since you mention a jack. If the vertical distance between your pump cylinder and pressure gauge is more than about 15 feet the pump will use more than 1 horsepower, assuming an overall efficiency of 40%. If this is a shallow well pump with the water not more than 15 feet below the pump cylinder 1 horsepower should be ample.

Two No. 8 wires will be satisfactory.

It is always best to protect your motor against possible overload. Use a thermal overload switch. It should be of a size to correspond with the ampere rating on the name plate of your motor.

Apology Pending

The ladies of the Helping Hand Society enjoyed a swap social on Friday evening. Everybody brought something they didn't need. Many of the ladies were accompanied by their husbands.

BUYERS' INFORMATION SERVICE

As a reader of ELECTRICITY ON THE FARM you are entitled to our buyers' information service free of cost. When looking for information about equipment or material that you plan to buy, first read carefully the advertisements in this issue. They are your best guide. Then, if you do not find what you want, just use the coupon below to tell us what you need and we will see that you get the information you want.

USE THIS READER SERVICE COUPON

The more clearly you specify what you want, the more exactly we can meet your requirements.

ELECTRICITY ON THE FARM

Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

....

....

My name is .....

Address .....

I get electricity from .....

.....

Check here ☐ if dealer. 4-39

MASTER MILKER

"Easiest to Clean"

(PATENTS PENDING)

Yes... Only 3 Minutes To Clean CLEAN

ENTIRELY NEW Latex-Valve principle . . . won't clog, corrode, foul or fail!

No special costly pails! No pipelines! No pulsator! No sore teats! No leaky valves! No big bills for repairs or parts! Cheapest milker to buy and use! Milks 20 or more per hour and GETS ALL THE MILK A MACHINE CAN GET. Gasoline or electric power.

FREE DEMONSTRATION . . . no obligation. Address Room 23, Anker-Holth, Port Huron, Michigan, for the sealed AMAZING SECRET.

NEW!-

ONE-PIECE LATEX-VALVES

(PATENTS PENDING)

. . . the 1939 MIRACLE!

DEALERS AND DISTRIBUTORS WRITE TODAY

SEND FOR THE AMAZING SEALED SECRET

OUR 35th YEAR

Anker-Holth

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Motor Powered Estate Sprayer

The small wheelbarrow type sprayer shown has a 12½ gal. tank, double-acting 225 lb. pressure pump powered by a ¼ h.p. motor. It comes equipped with 15 ft. of hose, pressure gage, adjustable nozzle and 18 in. pipe extension and may be had with rubber or steel tire. Price $75 to $110.

Mixer for Wet or Dry Feeds

Mixing wet mashes for fattening broilers or other poultry can be done mechanically by a mixer which is driven by a ⅓ - horsepower, 110-220 volt motor. Two 18-inch blades revolve on the end of a vertical shaft to mix the mash in a tub. Capacity is rated 60 to 75 pounds per batch and the cost of the mixer is $75 delivered.

New Publications

SUGGESTIONS FOR LIGHTING THE SCHOOLHOUSE. Iowa State College, Engineering Extension Service Bulletin 116, Ames, Ia.

"STORAGE OF FRUITS AND VEGETABLES IN COMMUNITY FREEZER LOCKERS," Miscellaneous Extension publication 47,, 1938. U. S. Department of Agriculture, Washington, D. C.

"SHALLOW-WELL WATER SYSTEMS," Agricul-

Westco GIVES YOU 38% MORE WATER

Not a trickling stream, but a steady torrent of water . . . that's what you get with a Westco. Because Westco delivers 38% above rated capacity when pumping to surface outlets! Write for FREE literature on deep and shallow well models today!

MICRO-WESTCO, INC.
13004 State St., Bettendorf, Ia.

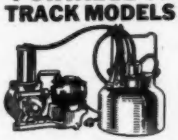
Grind Your Own **FEED-10¢ A TON** *Pay as You Grind*

RED TORNADO HAMMER MILL

You can own this amazing feed grinder for what you are now paying to have your feed ground. **Save time and money.** Grind what you want when you want it—wheat, corn, oats, barley, ear corn, roughage, stalks, etc. **SELF FEEDING—REQUIRES NO ATTENTION** Does same work as big, expensive mills. Generates a "tornado" of smashing, grinding power. Works from any 110 or 220 volt outlet. Special ½ H.P. motor swings hammers at terrific speed. Uses little current. R. C. Wurzel, Mich., says: "After using 6 mos. have ground 3100 bu. oats, barley and corn—pleased with results." Selected for feed room of "Electrified Farm of Electric Utility Industry"—New York World's Fair.
$5.00 DOWN—30 DAYS TRIAL. Price and terms easily met. Use mill at our risk for 30 days. **SEND NO MONEY NOW.** Write for details.
VIKING MFG. CO. Dept. 33 Jackson, Mich.

Lowest Prices!
FORDS MILKERS

PORTABLE OR TRACK MODELS



Most economical . . simple . . sturdy . . fewest parts . . cleans itself automatically. Thousands of satisfied users. Fully guaranteed. Write for catalog, low prices and easy terms.

MYERS-SHERMAN CO.
1335 E. 12th, STREATOR, Illinois

tural Extension Bulletin 392, 1938. Cornell University, Ithaca, New York.

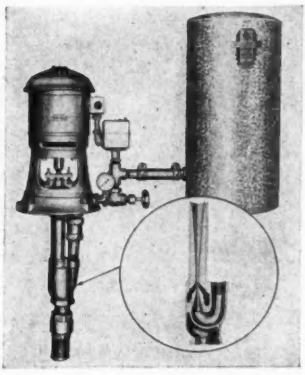
"ELECTRIC DAIRY HEATERS AND UTENSIL STERILIZERS," Michigan Agricultural Experiment Station, Quarterly Bulletin, Vol. 21, No. 2, November 1938. Michigan State College, East Lansing, Michigan.

Portable Electric Hand Lamp

Will project light 2,500 ft. or with different lens will spread the light. Main bulb will operate 10 hours continuously on one battery charge. Battery sealed from spilling acid. The special feature is that the battery may be rech arged without removal from its case by plugging a small charging device into the regular 115 v. A.C. circuit.

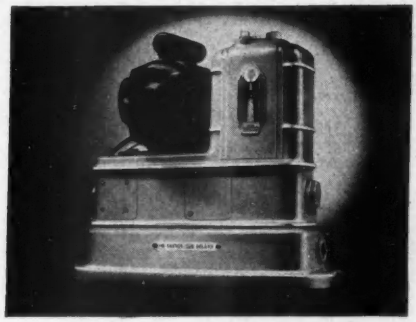
Jet Pumps

Several Eastern manufacturers have recently placed jet pumps for home water supply on the market. The illustration is typical. The jet pump is an in-between the shallow well and deep well pumps. It is especially adapted for lifts of from 22 ft. to 80 or 100 ft. The pump consists of a shallow well pump, usually of the turbine or centrifugal type, though it may be a piston type. This type of pump would lift water only about 22 ft., but after it is primed, part of its discharge is piped back into the well under pressure and caused to force water up in the suction pipe through an injector such as is used for forcing water into a steam boiler. The pump suction then picks up this water and sends part of it out into the discharge pipe. Its advantages are that the pump does not need to be over the well; working parts are all above ground; no sucker rods or drive shafts; pump may be in frost proof pit or basement; and lower first cost and maintenance expense. It is less efficient at the higher lifts. These pumps have been in use on the Pacific Coast for a number of years and have given good satisfaction.



New Streamlined Pumps

In line with modern improvements, one of the old line manufacturers of pumps has redesigned their entire line of shallow and deep well pumps,



streamlining them and incorporating claimed mechanical refinements which will increase efficiency of operation. The pump shown is the shallow well model, powered by a ¼ h.p. motor. All models are equipped with a patented automatic capacity control.

Colorado Farmers Use Water Heaters

Many farmers in Arapahoe County, Colorado, used tank heaters for warming drinking water for livestock last winter. County Agent A. H. Tedman reports that it has been determined that a large amount of the winter loss of ilvestock is due to lack of water.

June, July and December Best Months for Broiler Chicks

According to a two-year price summary, prices for broilers have been highest during September, October and March and lowest during June according to Prof. F. P. Jeffrey of Rutgers University. This means that the best months to start broiler chicks have been June, July and December and the poorest time has been March or early April.

CLASSIFIED ADVERTISING

WRITE today for free literature on money saving brooders, parts for home-made equipment, burglar and power shortage alarms, ventilators, incubators, fly electrocutors, etc. Chicks have a surer start with Lyon Electric Brooders. Safe, steady, dependable heat. The triumph of twenty-four years of specialized experience. Advisory service without obligation. Write today listing your requirements. LYON RURAL ELECTRIC CO., Dept. EF, San Diego, Calif.

FREE—BROWER'S New big 100-page Poultry Supply Catalog and Guide. Shows largest line of poultry equipment in world—all at new low prices. Over 425 items, including electric waterers, brooders, incubators, feed mixers, broiler batteries. Write today. Brower Mfg. Company, Dept. N-39, Quincy, Ill.

GET YOUR FREE COPY NOW Bussey 80-page book for Podultrymen. Low Factory Prices. Parts for electric brooders and batteries; heating assemblies; wire Fabrics; Poultry Equipment. Save Money. BUSSEY PEN PRODUCTS CO., 5151 West 65th St., Chicago.